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ABSTRACT

The history and current state of evaluation of vocational education and training (VET) in Australia was examined. The study's main conclusion was that, despite its important potential, evaluation has thus far been little used for the improvement of VET in Australia. Other conclusions of the study were as follows: (1) little development of evaluation theory has occurred over the past few decades; (2) during the past 5 years, only 98 evaluations of VET and 4 evaluations of workplace training were published; (3) according to a recent survey of industry, only 48% of worksites formally evaluated any training delivered in the past year; (4) most of the information being sought by Technical and Further Education (TAFE) agencies requires routine processing of data already held on TAFE's computer systems; (5) because of its relative ease and inexpensiveness, the performance indicators approach has replaced traditional course evaluation approaches in most areas of formal VET in Australia and overseas; and (6) three issues affecting the current state of evaluation of VET in Australia are little or no theory base, little policy focus, and little evaluation of "big" issues. (The report contains 43 references. Appended is a chart explaining the traditional division between evaluation and research.) (MN)

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Rod McDonald
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Executive summary

EVALUATION HAS THE POTENTIAL to play an important role in vocational education and training. By its focus on formulation of the significant questions, data gathering, analysis, and subsequent action it can make decisions at all levels better considered, and can help to improve policy and practice.

However, evaluation has so far been little used for the improvement of VET in Australia. This paper was commissioned by the National Research and Evaluation Committee in order to document the state of evaluation in VET. The paper first describes the background to evaluation in VET, documents the state of evaluation in Australia and makes several recommendations for improving the use that is made of evaluative techniques.

There are two key functions of evaluation. At the core of evaluation is the concept of 'value', in that evaluation involves finding the 'value' or 'worth' of something. Evaluation has also come to mean the act of gathering information in order to make decisions about a specific program or aspect of education, and act on the information obtained.

In addition to these two key characteristics, evaluation is sometimes used to increase awareness of particular activities or promote greater awareness of the benefits of a program.

There has been little development in evaluation theory in the last couple of decades. Useful summaries of the theoretical development of evaluation are given by Nevo (1983) and Guba and Lincoln (1981).

Over the past five years, there were only 98 published evaluations on vocational education, and four on workplace training (see table 1). In a recent survey of industry, only 48 per cent of worksites formally evaluated any training delivered in the past year (see table 2).

A recent study of evaluation by the authors identified the distribution of published evaluation reports across various categories of evaluation in vocational education and training and across States/Territories.

Most of the information on course performance sought by TAFE agencies requires routine processing of data already held on the computer systems of TAFE. The data is collected from various sources including enrolment forms, examination results, TAFE personnel records and financial records. Further information is collected through surveys of students, graduates and employers to identify student destinations, student satisfaction and industry satisfaction. The performance indicators approach is relatively easy and inexpensive. It appears to have replaced traditional course evaluation approaches in most areas of formal vocational education in Australia and similar practices are reported overseas.

In Australia over the past five years, 27 reports, books or research papers were found on evaluation practices. Only six reports analysed current evaluation practices in vocational education and training and this probably reflects the lack of much research on evaluation in Australia. The lack of research could reflect the trend away from local evaluation of courses towards centralised performance indicator monitoring in TAFE in Australia.

Three issues arise from our survey of the current state of evaluation in VET in Australia.

- little or no theory base
- little policy focus
- little evaluation of the 'big' issues

Context

What is evaluation?

THERE ARE TWO KEY FUNCTIONS of evaluation. At the core of evaluation is the concept of 'value', in that evaluation involves finding the 'value' or 'worth' of something (Scriven 1967). Evaluation has also come to mean the act of gathering information in order to make decisions about a specific program or aspect of education, and act on the information obtained (Stufflebeam 1971). We have included these two aspects in our definition of evaluation of vocational education and training:

> *Evaluation of vocational education and training is the systematic investigation to assist those making judgements of the value or worth of a program or other aspect of vocational education and training, for the purpose of decision making.*

The evaluation may focus on the appropriateness, efficiency or effectiveness of vocational education and training.

In addition to these two key characteristics, evaluation is sometimes used to increase awareness of particular activities or promote greater awareness of the benefits of a program (Cronbach et al. 1980).

Evaluation and research

To sketch the current state of evaluation in vocational education and training, we firstly need to distinguish evaluation from other types of research and investigation, as the boundaries are not clear cut and the use of terms is not consistent in the field.

In contrast to evaluation, research involves conceptual or empirical investigations which contribute generally to our knowledge about vocational education and training (McDonald et al. 1992, p. 7). The core word here is 'generally'.

Evaluation, on the other hand, will always have a specific focus. It can have many purposes, ranging from guiding the development of policies, programs and practices (formative evaluation) to decisions on program continuation or accountability (summative evaluation). Systematic and timely evaluation can thus underpin changes in practice and important policy decisions. In other words, a properly designed program of evaluation helps to ensure value for money spent on vocational education and training.

The different purposes and outcomes of research and evaluation are highlighted by the many ways in which their processes differ. They differ in the way the problem is defined, in who makes key decisions, in the level of autonomy and the role of the investigator (see appendix).

Development of evaluation theory and practice

There has been little development in evaluation theory in the last couple of decades. The initial conception of evaluation saw it representing the assessment of gains caused by an education or training program—'the process of determining to what extent the educational objectives are actually being realised' (Tyler 1949). This was followed, after a while, by considerable theoretical development of the area in the 1970s. The conceptualisation of evaluation proceeded through the development of what were described as 'models' but which are more properly called 'approaches' (see for example the list in the next section), together with the development of evaluation standards (Joint Committee on Standards for Educational Evaluation 1981). Useful summaries of the theoretical development of evaluation are given by Nevo (1983) and Guba and Lincoln (1981).

In terms of its effect on evaluation practitioners, by far the most important theoretical development is the ground-breaking work by Parlett and Hamilton (1972). This altered the way in which evaluation was conceptualised, by signalling a change of focus from evaluation solely based on measuring inputs and outputs, to evaluation which studied the process of education and training as well.

In the higher education sector, the late 1970s and early 1980s saw the application of the principles of evaluation to teaching (but not to research). At around this time, the Australian Government signalled its view of the

importance of evaluation by the establishment of the Evaluations and Investigations Program, which still continues almost twenty years later. In the VET sector, there has been an extremely modest level of activity, which is disturbing in view of the large expenditure on vocational education and workplace training, estimated at $5.4 billion in Australia in 1991 (McDonald et al. 1992, p. 25). Evidence for the lack of evaluation is outlined in the next section. Over the past five years, there were only 98 published evaluations on vocational education, and four on workplace training (see table 1). In a recent survey of industry, only 48 per cent of worksites formally evaluated any training delivered in the past year (see table 2).

The dimensions of evaluation

Evaluations can differ in their focus, purpose, approach, methodology, and reporting. The following examples, by no means exhaustive, give some idea of the range of possibilities.

Focus:

- education or training body
- specific training program
- curriculum
- training materials
- individuals

Purpose:

- bring about improvements
- solve a problem
- find a problem
- monitor progress
- judge success

Approach (including core references):

- context-input-process-product (Stufflebeam et al. 1971)
- behavioural objectives (Tyler 1949)
- illuminative (Parlett & Hamilton 1972; Parlett & Dearden 1977; Kemmis 1980; Parlett 1990)

- goal free (Scriven 1973; Scriven 1972)
- expert (Eisner 1976)
- accreditation (Roe & McDonald 1984, pp. 125-131)
- adversary (Owens 1973; Popham & Carlson 1977; Thurston 1978)
- transaction (Rippey 1973)

Methodology:

- setting goals, reviewing needs
- developmental testing (Nathenson & Henderson 1980)
- validation
- participant feedback
- learning
- on-the-job analysis
- cost-benefit analysis (Levin 1983)

The last four steps above correspond approximately to the four-stage model which is much used in the evaluation of training programs (Kirkpatrick 1975).

Reporting:

- comprehensive evaluation report
- report to management
- newsletter or newspaper item
- note to training officers
- report to supervisors
- reporting back to participants

What constitutes a 'good' evaluation?

Remarkably little is written to enable those responsible for overseeing or interpreting evaluation to judge their worth. There are a number of guides to evaluation methods, but little on standards. The following checklist of questions (adapted from Roe & McDonald 1984) is suggested as a guide to the questions that need to be addressed in an evaluation, although not all will always be relevant.

Context	What are the major features of the context in which an evaluation is to take place which make that evaluation necessary or desirable?
Purpose	What are (i) the general, and (ii) the specific purposes of those requesting or sponsoring the evaluation and/or of those carrying it out? (Both these questions relate to the purpose of the evaluation.)
Climate	What are the attitudes among those involved in, or effected by, the evaluation which make for (i) a favourable climate, (ii) an unfavourable climate?
What information	What information will be sought in carrying out the evaluation? How are decisions about 'what information' affected by: the general context; the climate; the general and specific purposes; the audience(s)? Can the information sought be classified into, for example, 'sufficient', 'essential' and 'desirable'? Is it planned to seek any information which is interesting rather than useful? What are the realistic limits of the information which should be sought?
Information sources	Who and what are essential sources of information? Who and what are desirable but not essential sources?
Who evaluates	Who will collect evaluation information? How does this decision relate to the purposes of the evaluation and to its audience(s)?
When?	When will evaluation information be collected? What considerations of context, climate, purpose, and the nature of the information and its sources, affect this decision?
Methods	What methods or instruments will be used to collect evaluative information? Which of the foregoing questions help to determine the choice of methods and how do they affect the decision?
Processing of data	What will happen to the data, once collected? What are the appropriate forms for ordering, summarising, and presenting the information, and which methods of analysis will achieve that result?

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Reporting	What factors in context, climate, audience(s), help to determine the appropriate forms for presentation of the information? How should it be reported, and to whom? Is there one single, identifiable audience to which the evaluation findings will be addressed, or are there two or more separate or overlapping audiences?
Confidentiality	Who will have access to what pieces of information? What steps will be taken to ensure confidentiality of those who provide information?
Implementation	What subsequent action should follow the reporting? Will there be findings to be implemented? How should they be implemented? Who will be involved in the implementation? If the findings do not suggest or imply any consequential action, what other consequences, if any, are anticipated?
Evaluating the evaluation	What steps will be taken to evaluate the evaluation? What is to be learned from this evaluation which will be useful for future evaluations? What can be built into the evaluation plan to ensure that any lessons are not lost or neglected?

State of evaluation in Australia

TO OBTAIN AN OVERVIEW of evaluation practice in vocational education and training in Australia, the following information sources were pursued:

- published reports and papers
- unpublished reports and papers
- interviews with vocational educators and trainers

The VOCED database provided the main source of information on published and unpublished reports and papers. However, it is in the nature of evaluation that the audience for the outcomes of many evaluation projects is very limited, so that the reports are often unpublished and not widely known. Thus, to obtain a more complete picture of evaluation practice requires direct contact with practitioners in vocational education and training.

A recent study of evaluation by the authors (McDonald et al. 1997) identified the distribution of published evaluation reports across various categories of evaluation in vocational education and training and across States/Territories. Table 1 shows the distribution of published evaluation reports across three broad categories and the two fields of formal vocational education and workplace training. The table is mainly based on information from McDonald et al. (1997, p. 6).

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A feature of the distribution shown in the table is the low number of published evaluations of courses or training programs. In the case of TAFE, the main reason for this is the trend, in all States and Territories, away from ad-hoc in-depth evaluations of courses to systematic monitoring of course performance indicators (Guthrie 1991). Most of the information on course performance sought by TAFE agencies requires routine processing of data already held on the computer systems of TAFE. The data is collected from various sources including enrolment forms, examination results, TAFE personnel records and financial records. Further information is collected through surveys of students,

Table 1: Number of reports and books on evaluation published in Australia, 1991–96

	Formal vocational education (TAFE and other providers)	Workplace training (provided by employer)	Both vocational education and workplace training
Evaluations of courses/training	13	1	0
Evaluations of other aspects of vocational education	85	3	0
Reports and books on evaluation practices	10	9	8
TOTAL	108	13	8

graduates and employers to identify student destinations, student satisfaction and industry satisfaction. The performance indicators approach is relatively easy and inexpensive. It appears to have replaced traditional course evaluation approaches in most areas of formal vocational education in Australia and similar practices are reported overseas (Hoachlander et al. 1992, pp. 8–9; Barnett 1994, p. 165).

In the case of workplace training programs, only one published evaluation of training in Australia was found. It appears that any evaluations undertaken are rarely reported outside the enterprise. A recent survey of enterprises and series of case studies in Australia (McIntyre et al. 1996; Hayton et al. 1996; Smith et al. 1995) provided some information on the extent of implementation of evaluation of workplace training. The study revealed that evaluation of training is relatively undeveloped in most enterprises across the industry sectors. Despite the evident commitment to training by most enterprises, there was a conspicuous lack of attention to the impact of training on productivity or profitability. The typical approach to evaluation consists of the distribution of evaluation questionnaires—described as 'happy sheets' by some trainers—at the end of training sessions. There was little evidence of follow-up to evaluate whether training produced the expected benefits. Similarly, none of the case study enterprises attempted to measure the full costs or benefits of training.

The survey indicated that 48 per cent of worksites formally evaluated any training that was delivered in the past year, but the percentage varies considerably with size of enterprise (see table 2). There were few differences among the industry groups, with the size of the worksite making a much greater difference to whether the worksite formally evaluated training.

Table 2: The extent of use of workplace training evaluation: How many evaluate any training delivered?

Small worksites (n=714)	Medium worksites (n=525)	Large worksites (n=521)	All worksites (n=1760)
223	269	346	838
31%	51%	66%	48%

Source: Hayton 1996, p. 182

For evaluations other than courses, 88 reports on evaluations of vocational education and training in Australia over the past five years were found. These mostly covered aspects of TAFE provision, including evaluations of TAFE management systems, teaching facilities, learning materials, assessment methods and educational processes and schemes. These evaluations varied greatly in method and scope. Most reports did not give a clear and full explanation of the evaluation method used, and did not indicate the theoretical basis of the evaluation approach.

At a national level, the most comprehensive summary of policy-oriented evaluation studies is contained in a review published by ANTA (ANTA 1996). This summarises major reviews (The Review of the ANTA Agreement, *Successful reform*, and the Review of Implementation of Performance Measures in VET), as well as a number of evaluations of ANTA-funded projects.

State of research into evaluation

In Australia over the past five years, 27 reports, books or research papers were found on evaluation practices. Only six reports analysed current evaluation practices in vocational education and training and this probably reflects the lack of much research on evaluation in Australia. The lack of research could reflect the trend away from local evaluation of courses towards centralised performance indicator monitoring in TAFE in Australia. The remaining reports or books provided guides to evaluation methods, with eight publications covering methods of evaluation for both vocational education and workplace training. Of the remaining guides, the majority were primarily oriented to formal vocational education at TAFE, rather than workplace training.

The recent literature in North America and Europe on evaluation research shows a similar pattern to Australia of lack of publications on evaluation research. Journals of research and evaluation in education in recent years have many general research articles but very few on evaluation. There is little development of evaluation theory in recent years. Apparently the level of interest in evaluation in the 1970s has not been maintained in the 1990s. In part, at least, this can be attributed to a reduction in funding for full-scale evaluation projects (Stronach et al. 1996), leading to the use of 'quick and dirty' methods such as student feedback surveys, course monitoring and quality audits.

Only few writers have noted the trend away from the practice of full evaluation of courses and programs in vocational education and training. Some have criticised the use of cheaper and more 'bureaucratic and technicist' methods of quality assurance and accountability like the use of performance indicators (Barnett 1994). Others assert that performance indicator systems should complement periodic local evaluations of courses and programs (Hoachlander et al. 1992, pp. 8–9).

Findings and directions for further research

THREE ISSUES ARISE from our survey of the current state of evaluation in VET in Australia. These are outlined below, together with suggestions as to how a national strategy might remedy the shortcomings. They incorporate the suggestions for an evaluation protocol previously developed by ANTA (ANTA 1966).

Theory base

Internationally, the theoretical base of the study of evaluation has not moved during the last decade in the way that it did during the 1970s; the 1980s and 1990s have been a time for consolidation and application rather than innovation. For example, in a recent useful review of evaluation (Athanasou 1995), over two-thirds of the references were to papers prior to 1980.
In the VET sector, however, there appears to be little or no understanding of even the theoretical base developed in the 1970s; it is common to find evaluations that:

- are unclear as to their approach and theory base
- do not contain both description and judgment, both of which are required in an evaluation (Stake 1967)
- do not explain the relationships with other approaches to evaluation currently in use in the institution—particularly performance indicators and quality assurance mechanisms

There is also relatively little easily accessible material to guide practitioners in conducting an evaluation which will be both useful and cost effective. A series of articles for workplace trainers published in *Training and development in Australia* some years ago did this (McDonald & Bishop 1990; Newman 1990; Newman 1991); but, again, evaluation tends not to be a major focus of practitioner journals.

Recommendations for a national strategy:

- development of a program of training and associated support materials (based partly on existing materials) to enable practitioners to carry out competent micro-level evaluations
- development of a graduate certificate, to be offered nationally, for those in policy areas either overseeing evaluations or interpreting evaluative information
- commissioning of articles on evaluation, including examples of useful approaches to evaluation, for publication in practitioner journals
- theoretical and practical development of the relationship between local evaluation and centralised performance indicators and quality assurance mechanisms

Policy focus

Evaluation, like research, has not been used to provide the support that it could to those framing policy:

- VET policy has, in the past, tended to be formed at a rate that made evaluative input impossible.
- Only rarely do evaluations include analysis of cost-benefit issues (see for example McDonald 1995).
- Results of the evaluations are rarely made available in a form which will facilitate their use by those framing policy.
- Policy issues which are more difficult to resolve are often avoided in evaluation projects.

What is needed is a better blending of research and evaluation, which might lead to a more creative use of the results of both. There is also a need for State training systems to make better and more systematic use of evaluations. For example, the Victorian State Training Board has established an evaluative studies and review program which is designed to 'provide data and analysis to back up the State Training System's planning for, and delivery of, education and training services' (Monie 1992).

Recommendations for a national strategy:

- inclusion of a specific requirement that evaluation reports address both cost-benefit issues and policy implications wherever relevant

Evaluation of the 'big' issues

There has, to date, been relatively little systematic evaluation of the 'big' issues in VET, for example:

- the performance of the VET system
- the impact of competency-based training on both learning and productivity
- the impact of workplace learning programs on job performance and organisation performance

Recommendations for a national strategy:

- development of a program of evaluation to systematically review major VET initiatives, containing both summative and formative elements

In conclusion

Evaluation in VET in Australia has been a sporadic activity: carried out in some form on some occasions, not used to evaluate the 'big' issues, and rarely used as a tool in policy formation. The evaluation studies that have been carried out tend to use only a fraction of the available perspective, and do not connect with current quality assurance mechanisms. To use the 'stocktake' analogy, the key is rusted in the stockroom lock, one or two employees are working away, but the shelves are rather bare except for some boxes of old stock that will be difficult to move.

Evaluation, however, can be an important tool for those framing policy and in the daily work of practitioners. Initiatives to improve its quality are needed at all levels and the recommendations are designed to ensure that evaluative techniques make their proper contribution.

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Appendix

Evaluation and research: The traditional division

EVALUATION	RESEARCH
Problem definition	
Defined by evaluator with substantial input from stakeholders	Defined by researcher, perhaps with input from third-party funder
The place of the hypothesis	
Problematic, possibly defined by the goals of the program being evaluated	Central to the study, determined by the researcher
Replicability	
Duplication of a program site is usually not possible	Duplication of conditions is essential
Data to be collected	
Negotiated between the evaluator and the other stakeholders	Determined by the researcher
Randomisation	
Random assignment problematic and in many cases irrelevant or inappropriate	Random assignment to treatment/control taken as normal procedure
Autonomy	
Evaluator is dependent upon funding agency for approval of report/findings	Researcher is (relatively) independent of funding agency in reporting
Nature of outcome	
Generates a description of an activity which is intended to influence further iterations of that activity	Generates rules or principles which have general applicability but do not affect the object of the research
Role of investigator	
Usually becomes identified in part with the objective of study; at some risk of becoming advocate/investigator	Distant, uninfluenced in conduct by interaction with object of study—a judge/investigator
Intended influence	
Local, with greatest effect on iterations of the evaluated programs	General, and capable of being applied in differing circumstances

(reproduced from Robinson and Foyster 1996)

This review of research on vocational education and training is one of a series of reports commissioned to guide the development of future national research and evaluation priorities.

Professor Rod McDonald and Geoff Hayton have reviewed evaluation in training and vocational education in Australia. They draw conclusions relevant to vocational education and training policy and identify areas for further investigation.